

Serial Number: 09/823, 886AProcessing Date: 4-24-03
Edited by: M. SPENCER
Verified by: _____ (STIC staff)

- ☐ Changed a file from non-ASCII to ASCII
- ☐ Changed the margins in cases where the sequence text was "wrapped" down to the next line
- ☐ Edited a format error in the Current Application Data section, specifically: **ENTERED**
- ☐ Edited the Current Application Data section with the actual current number. The number inputted by the applicant was ☐ the prior application data; or ☐ other _____
- ☐ Added the mandatory heading and subheadings for "Current Application Data".
- ☐ Edited the "Number of Sequences" field. The applicant spelled out a number instead of using an integer.
- ☐ Changed the spelling of a mandatory field (the headings or subheadings), specifically: _____
- ☐ Corrected the SEQ ID NO when obviously incorrect. The sequence numbers that were edited were: _____
- ☐ Inserted or corrected a nucleic number at the end of a nucleic line. SEQ ID NO's edited: _____
- ☐ Corrected subheading placement. All responses must be on the same line as each subheading. If the applicant placed a response below the subheading, this was moved to its appropriate place.
- ☐ Inserted colons after headings/subheadings. Headings edited included: _____
- ☐ Deleted extra, invalid, headings used by an applicant, specifically: _____
- ☒ Deleted: ☐ non-ASCII garbage at the beginning/end of files; ☐ secretary initials/filename at end of file;
☐ page numbers throughout text; ☐ other invalid text, such as _____
- ☐ Inserted mandatory headings, specifically: _____
- ☐ Corrected an obvious error in the response, specifically: _____
- ☐ Edited identifiers where upper case is used but lower case is required, or vice versa.
- ☐ Corrected an error in the Number of Sequences field, specifically: _____
- ☐ A "Hard Page Break" code was inserted by the applicant. All occurrences had to be deleted.
- ☐ Deleted *ending* stop codon in amino acid sequences and adjusted the "(A)Length:" field accordingly (error due to a PatentIn bug). Sequences corrected: _____
- ☐ Other: _____

*Examiner: The above corrections must be communicated to the applicant in the first Office Action. DO NOT send a copy of this form.

3/1/95



OIPE

RAW SEQUENCE LISTING

PATENT APPLICATION: US/09/823,886A

DATE: 04/24/2003

TIME: 07:39:04

Input Set : A:\ptoms.txt

Output Set: N:\CRF4\04242003\I823886A.raw

4 <110> APPLICANT: Newell, Martha
6 Berry-Lowe, Sandra
9 <120> TITLE OF INVENTION: Compositions and methods for regulating metabolism in plants
12 <130> FILE REFERENCE: C1102/7002
C--> 15 <140> CURRENT APPLICATION NUMBER: US/09/823,886A
17 <141> CURRENT FILING DATE: 2001-03-30
20 <150> PRIOR APPLICATION NUMBER: US 60/193,533
22 <151> PRIOR FILING DATE: 2000-03-31
25 <160> NUMBER OF SEQ ID NOS: 16
28 <170> SOFTWARE: PatentIn version 3.0
31 <210> SEQ ID NO: 1
33 <211> LENGTH: 924
35 <212> TYPE: DNA
37 <213> ORGANISM: Homo sapiens
40 <400> SEQUENCE: 1
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43 ggaatagcgg cgtgcttgcc ggacgtgac accttcccgc tggacacggc caaagtccgg 120
45 ctccagggtcc aagggtgaatg cccgacgtcc agtggtatta ggtataaagg tgtcctggga 180
47 acaatcaccg ctgtggtaaa aacagaaggc cggatgaaac tctacagcgg gctgcctgcg 240
49 gggccttcagc ggcaaatacag ctccgcctct ctcaggatcg gcctctacga cacgggtccag 300
51 gagttcctca ccgcagggaa agaaacagca cctagttag gaagcaagat tttagctggt 360
53 ctaacgactg gaggagtggc agtattcatt gggcaaccca cagaggctcg gaaagtcaga 420
55 cttcaagcac agagccatct ccacggaatc aaacctcgct acacggggac ttataatgcg 480
56 tacagaataa tagcaacaac cgaaggcttg acgggtcttt ggaaagggac tactcccaat 540
58 ctgatgagaa gtgtcatcat caattgtaca gagctagtaa catatgatct aatgaaggag 600
60 gcctttgtga aaaacaacat attagcagat gacgtcccct gccacttggt gtcggctctt 660
62 atcgctggat tttgcgcaac agctatgtcc tccccgggtg atgtagtaaa aaccagattt 720
64 attaattctc caccaggaca gtacaaaagt gtgcccact gtgcaatgaa agtggttcact 780
66 aacgaaggac caacggcttt cttcaagggg ttggtacctt ccttcttgcg acttggtacc 840
68 tggaacgtca ttatgtttgt gtgctttgaa caactgaaac gagaactgtc aaagtcaagg 900
70 cagactatgg actgtgccac ataa 924
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75 <211> LENGTH: 307
77 <212> TYPE: PRT
79 <213> ORGANISM: Homo sapiens
82 <400> SEQUENCE: 2
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85 1 5 10 15
87 Leu Phe Ser Ala Gly Ile Ala Ala Cys Leu Ala Asp Val Ile Thr Phe
88 20 25 30
90 Pro Leu Asp Thr Ala Lys Val Arg Leu Gln Val Gln Gly Glu Cys Pro
91 35 40 45
93 Thr Ser Ser Val Ile Arg Tyr Lys Gly Val Leu Gly Thr Ile Thr Ala

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Input Set : A:\ptoms.txt

Output Set: N:\CRF4\04242003\I823886A.raw

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96 Val Val Lys Thr Glu Gly Arg Met Lys Leu Tyr Ser Gly Leu Pro Ala
97 65      70      75      80
99 Gly Leu Gln Arg Gln Ile Ser Ser Ala Ser Leu Arg Ile Gly Leu Tyr
100      85      90      95
102 Asp Thr Val Gln Glu Phe Leu Thr Ala Gly Lys Glu Thr Ala Pro Ser
103      100      105      110
105 Leu Gly Ser Lys Ile Leu Ala Gly Leu Thr Thr Gly Gly Val Ala Val
106      115      120      125
108 Phe Ile Gly Gln Pro Thr Glu Val Val Lys Val Arg Leu Gln Ala Gln
109      130      135      140
111 Ser His Leu His Gly Ile Lys Pro Arg Tyr Thr Gly Thr Tyr Asn Ala
112 145      150      155      160
114 Tyr Arg Ile Ile Ala Thr Thr Glu Gly Leu Thr Gly Leu Trp Lys Gly
115      165      170      175
117 Thr Thr Pro Asn Leu Met Arg Ser Val Ile Ile Asn Cys Thr Glu Leu
118      180      185      190
120 Val Thr Tyr Asp Leu Met Lys Glu Ala Phe Val Lys Asn Asn Ile Leu
121      195      200      205
123 Ala Asp Asp Val Pro Cys His Leu Val Ser Ala Leu Ile Ala Gly Phe
124      210      215      220
126 Cys Ala Thr Ala Met Ser Ser Pro Val Asp Val Val Lys Thr Arg Phe
127 225      230      235      240
129 Ile Asn Ser Pro Pro Gly Gln Tyr Lys Ser Val Pro Asn Cys Ala Met
130      245      250      255
132 Lys Val Phe Thr Asn Glu Gly Pro Thr Ala Phe Phe Lys Gly Leu Val
133      260      265      270
135 Pro Ser Phe Leu Arg Leu Gly Ser Trp Asn Val Ile Met Phe Val Cys
136      275      280      285
138 Phe Glu Gln Leu Lys Arg Glu Leu Ser Lys Ser Arg Gln Thr Met Asp
139      290      295      300
141 Cys Ala Thr
142 305
144 <210> SEQ ID NO: 3
146 <211> LENGTH: 1105
148 <212> TYPE: DNA
150 <213> ORGANISM: Homo sapiens
153 <400> SEQUENCE: 3
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156 tcctgggacg tagcaggaaa tcagcatcat ggttgggttc aaggccacag atgtgcccc 120
158 tactgccact gtgaagtttc ttggggctgg cacagctgcc tgcacgcag atctcatcac 180
160 ctttcctctg gatactgcta aagtccggtt acagatccaa ggagaaagtc aggggccagt 240
162 gcgcgctaca gccagcgccc agtaccgcgg tgtgatgggc accattctga ccatggtgcg 300
164 tactgagggc ccccgaagcc tctacaatgg gctgggtgcc ggcctgcagc gccaaatgag 360
166 ctttgcctct gtccgcatcg gcctgtatga ttctgtcaaa cagttctaca ccaagggtc 420
168 tgagcatgcc agcattggga gccgcctcct agcaggcagc accacaggtg ccctggctgt 480
170 ggctgtggcc cagcccacgg atgtggtaaa ggtccgattc caagctcagg cccgggctgg 540
172 aggtggtcgg agataccaaa gcaccgtcaa tgcctacaag accattgccc gagaggaagg 600
174 gttccggggc ctctggaaag ggacctctcc caatgttgct cgtaatgcca ttgtcaactg 660

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DATE: 04/24/2003

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Input Set : A:\ptoms.txt

Output Set: N:\CRF4\04242003\I823886A.raw

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178 agatgacctc ccttgccact tcacttctgc ctttggggca ggcttctgca ccactgtcat 780
180 cgcctcccct gtagacgtgg tcaagacgag ataatgaac tctgccctgg gccagtacag 840
182 tagcgctggc cactgtgccc ttaccatgct ccagaaggag gggcccgag ccttctacaa 900
184 agggttcatg ccctcctttc tccgcttggg ttcttggaac gtggtgatgt tcgtcaccta 960
186 tgagcagctg aaacgagccc tcatggctgc ctgcacttcc cgagaggctc ccttctgagc 1020
188 ctctcctgct gctgacctga tcacctctgg ctttgtctct agccgggcca tgctttcctt 1080
190 ttcttccttc tttctcttcc ctccg 1105
193 <210> SEQ ID NO: 4
195 <211> LENGTH: 314
197 <212> TYPE: PRT
199 <213> ORGANISM: Homo sapiens
202 <400> SEQUENCE: 4
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205 1 5 10 15
207 Thr Ala Thr Val Lys Phe Leu Gly Ala Gly Thr Ala Ala Cys Ile Ala
208 20 25 30
210 Asp Leu Ile Thr Phe Pro Leu Asp Thr Ala Lys Val Arg Leu Gln Ile
211 35 40 45
213 Gln Gly Glu Ser Gln Gly Pro Val Arg Ala Thr Ala Ser Ala Gln Tyr
214 50 55 60
216 Arg Gly Val Met Gly Thr Ile Leu Thr Met Val Arg Thr Glu Gly Pro
217 65 70 75 80
219 Arg Ser Leu Tyr Asn Gly Leu Val Ala Gly Leu Gln Arg Gln Met Ser
220 85 90 95
222 Phe Ala Ser Val Arg Ile Gly Leu Tyr Asp Ser Val Lys Gln Phe Tyr
223 100 105 110
225 Thr Lys Gly Ser Glu His Ala Ser Ile Gly Ser Arg Leu Leu Ala Gly
226 115 120 125
228 Ser Thr Thr Gly Ala Leu Ala Val Ala Val Ala Gln Pro Thr Asp Val
229 130 135 140
231 Val Lys Val Arg Phe Gln Ala Gln Ala Arg Ala Gly Gly Gly Arg Arg
232 145 150 155 160
234 Tyr Gln Ser Thr Val Asn Ala Tyr Lys Thr Ile Ala Arg Glu Glu Gly
235 165 170 175
237 Phe Arg Gly Leu Trp Lys Gly Thr Ser Pro Asn Val Ala Arg Asn Ala
238 180 185 190
240 Ile Val Asn Cys Ala Glu Leu Val Thr Tyr Asp Leu Ile Lys Asp Ala
241 195 200 205
243 Leu Leu Lys Ala Asn Leu Met Thr Asp Asp Leu Pro Cys His Phe Thr
244 210 215 220
246 Ser Ala Phe Gly Ala Gly Phe Cys Thr Thr Val Ile Ala Ser Pro Val
247 225 230 235 240
249 Asp Val Val Lys Thr Arg Tyr Met Asn Ser Ala Leu Gly Gln Tyr Ser
250 245 250 255
252 Ser Ala Gly His Cys Ala Leu Thr Met Leu Gln Lys Glu Gly Pro Arg
253 260 265 270
255 Ala Phe Tyr Lys Gly Phe Met Pro Ser Phe Leu Arg Leu Gly Ser Trp
256 275 280 285

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PATENT APPLICATION: US/09/823,886A

DATE: 04/24/2003

TIME: 07:39:04

Input Set : A:\ptoms.txt

Output Set: N:\CRF4\04242003\I823886A.raw

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258 Asn Val Val Met Phe Val Thr Tyr Glu Gln Leu Lys Arg Ala Leu Met
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261 Ala Ala Cys Thr Ser Arg Glu Ala Pro Phe
262 305                      310
264 <210> SEQ ID NO: 5
266 <211> LENGTH: 1132
268 <212> TYPE: DNA
270 <213> ORGANISM: Homo sapiens
273 <400> SEQUENCE: 5
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276 ccaccgctgc actgaagccc agggctgtgg agcagcctct ctcttggac ctctctcgg      120
278 ccctaaaggg actgggcaga gccttccagg actatggttg gactgaagcc ttcagacgtg      180
280 cctcccacca tggctgtgaa gttcctgggg gcaggcacag cagcctgttt tgctgacctc      240
282 gttacctttc cactggacac agccaaggtc cgcctgcaga tccaggggga gaaccaggcg      300
284 gtccagacgg ccgggctcgt gcagtaccgt ggcgtgctgg gcaccatcct gaccatgggtg      360
286 cggactgagg gtccctgcag cccctacaat gggctgggtg ccggcctgca gcgccagatg      420
288 agcttcgcct ccattccgcat cggcctctat gactccgtca agcagggtga caccaccaaa      480
290 ggcgcggaca actccagcct cactaccgga attttggccg gctgcaccac aggagccatg      540
292 gcggtgacct gtgccagacc cacagatgtg gtgaagggtc gatttcaggc cagcatacac      600
294 ctccggccat ccaggagcga cagaaaatac agcgggacta tggacgccta cagaaccatc      660
296 gccagggagg aaggagtcag gggcctgtgg aaaggaactt tgcccaacat catgaggaat      720
298 gctatcgtca actgtgctga ggtggtgacc tacgacatcc tcaaggagaa gctgctggac      780
300 taccacctgc tactgacaa cttcccctgc cactttgtct ctgcctttgg agccggcttc      840
302 tgtgccacag tgggtggcctc cccggtggac gtggtgaaga cccggtatat gaactcacct      900
304 ccaggccagt acttcagccc cctcgactgt atgataaaga tgggtggcca ggagggcccc      960
306 acagccttct acaaggggtg agcctcctcc tgcctccagc actccctccc agagaacagg      1020
308 ggcttctttc ttttcgaatg tggctaccgt ggggtcaacct gggatgtagc ggtgaagagt      1080
310 acagatgtaa atgccacaaa gaagaagttt aaaaaacat gcaaaaaaaaa aa      1132
313 <210> SEQ ID NO: 6
315 <211> LENGTH: 284
317 <212> TYPE: PRT
319 <213> ORGANISM: Homo sapiens
322 <400> SEQUENCE: 6
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325 1                      5                      10                      15
327 Asp Val Pro Pro Thr Met Ala Val Lys Phe Leu Gly Ala Gly Thr Ala
328      20                      25                      30
330 Ala Cys Phe Ala Asp Leu Val Thr Phe Pro Leu Asp Thr Ala Lys Val
331      35                      40                      45
333 Arg Leu Gln Ile Gln Gly Glu Asn Gln Ala Val Gln Thr Ala Arg Leu
334      50                      55                      60
336 Val Gln Tyr Arg Gly Val Leu Gly Thr Ile Leu Thr Met Val Arg Thr
337 65                      70                      75                      80
339 Glu Gly Pro Cys Ser Pro Tyr Asn Gly Leu Val Ala Gly Leu Gln Arg
340      85                      90                      95
342 Gln Met Ser Phe Ala Ser Ile Arg Ile Gly Leu Tyr Asp Ser Val Lys
343      100                     105                     110
345 Gln Val Tyr Thr Pro Lys Gly Ala Asp Asn Ser Ser Leu Thr Thr Arg
346      115                     120                     125

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DATE: 04/24/2003

TIME: 07:39:04

Input Set : A:\ptoms.txt

Output Set: N:\CRF4\04242003\I823886A.raw

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348 Ile Leu Ala Gly Cys Thr Thr Gly Ala Met Ala Val Thr Cys Ala Gln
349      130                      135                      140
351 Pro Thr Asp Val Val Lys Val Arg Phe Gln Ala Ser Ile His Leu Gly
352 145                      150                      155                      160
354 Pro Ser Arg Ser Asp Arg Lys Tyr Ser Gly Thr Met Asp Ala Tyr Arg
355                      165                      170                      175
357 Thr Ile Ala Arg Glu Glu Gly Val Arg Gly Leu Trp Lys Gly Thr Leu
358                      180                      185                      190
360 Pro Asn Ile Met Arg Asn Ala Ile Val Asn Cys Ala Glu Val Val Thr
361      195                      200                      205
363 Tyr Asp Ile Leu Lys Glu Lys Leu Leu Asp Tyr His Leu Leu Thr Asp
364      210                      215                      220
366 Asn Phe Pro Cys His Phe Val Ser Ala Phe Gly Ala Gly Phe Cys Ala
367 225                      230                      235                      240
369 Thr Val Val Ala Ser Pro Val Asp Val Val Lys Thr Arg Tyr Met Asn
370                      245                      250                      255
372 Ser Pro Pro Gly Gln Tyr Phe Ser Pro Leu Asp Cys Met Ile Lys Met
373      260                      265                      270
375 Val Ala Gln Glu Gly Pro Thr Ala Phe Tyr Lys Gly
376      275                      280

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378 <210> SEQ ID NO: 7

380 <211> LENGTH: 6428

382 <212> TYPE: DNA

384 <213> ORGANISM: Solanum tuberosum

387 <400> SEQUENCE: 7

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388 gaattcatca catataaata gtgtggtcctt ccttgtgttg ggtagaagta gaaacaacaa      60
390 gaaatataaa agagaaagag tggaagaaaa gatgagaaat attatattgt gtatattgag      120
392 taagtgtagt gaacgagaga gttgagacag agaaaatatt ttaagtcttt aactatattc      180
394 actatacaaa ggagaatatt catatgttga aggaaagtgt tcttgtgtgg agttttggac      240
396 tcttcaacta attcagagtt gtacaacgtt attggactat tgtatcctgg agaggacaag      300
398 tcaagagtga tactgctgga tcggtgtaga ttatgccgta gttgacttga atcttcttaa      360
400 agagagtgag atattcgtgc ctcagtctaa aaatttgttt attcattttt gtcattttat      420
402 tttcaactat aatattttgt atttgtggta tattacactg ccttatcatg ataatcatcg      480
404 tgattttctaa ctagatcatg acgtctcaat taaatgtttt cttccaacta aacacatccc      540
406 atattttatat tattcgacat tggttaattt gattatttat cccactttta gcctatgcac      600
408 aggggtag ctatgttaaa gtcagggtgt taaattgaat atccttcgtc aaaaactaat      660
410 atcatattta tgtaaaatta tatacgaagt gattaaataa catattttgg acattcttaa      720
412 cagaacaagg tgttgttgcc caatcgtttc attatttctg tcacaattaa caaatctacc      780
414 atgtgaaata ggtgtacttc accatggccc ttgaatgtat gacaagccgt atattcgata      840
416 ggaaagagta acgtttacgc atccttaata aaatgttaga tgatgaatga ggatctaata      900
418 agcatatgtg caaagctcca accaatcatg attatctaataa agagtgtgct ttattcatta      960
420 ttctaaaatt caacaattaa taaaataaatt aggtcaaaag cacatggttg agtggatgag      1020
422 tttgatcaac ttgtaaatat attattgcct ttattcatct ctagcttcat tattattatt      1080
424 ttattagggt ctatttaatt tctcgtatgt gatatttgca ttaaaattca attaatattg      1140
426 attcacatga tataaaaccc caatcacact actcgaattt aaaaccttta attaagggga      1200
428 gtaacaattg aataacaaaa aaaaatctgt tgggagtgcc acccccgaat agaccctgta      1260
430 gagcgcgatt caaatttaata cgaaactcta atgtgggctc cgagaaacaa aaaaaaaaaa      1320
432 caattgaata gcaaaggaaa acagagtagt gctgactgag caagcaaaag cccaattgaa      1380
434 atattagtag taaatgacag caatggccgt tgcgtaggac aagcacagca gcagccccgt      1440

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VERIFICATION SUMMARY

PATENT APPLICATION: US/09/823,886A

DATE: 04/24/2003

TIME: 07:39:05

Input Set : A:\ptoms.txt

Output Set: N:\CRF4\04242003\I823886A.raw

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L:873 M:257 W: Feature value mis-spelled or invalid, <221> Name/Key for SEQ ID#:13
L:895 M:257 W: Feature value mis-spelled or invalid, <221> Name/Key for SEQ ID#:14
L:917 M:257 W: Feature value mis-spelled or invalid, <221> Name/Key for SEQ ID#:15
L:939 M:257 W: Feature value mis-spelled or invalid, <221> Name/Key for SEQ ID#:16